

Contents

Special Report Notice Of Disclaimer	iii
List of Figures	viii
List of Tables	ix
Foreword	xi
1. Introduction	1-1
1.1 AIN History	1-1
1.2 Relationship to Standards	1-2
1.3 IN/AIN Aspects	1-3
2. Business Aspects of AIN	2-1
2.1 Motivation and Development of AIN	2-1
2.2 Business Drivers for AIN	2-3
2.2.1 AIN Reality	2-4
2.2.2 AIN Services	2-4
2.2.2.1 Life Cycle	2-4
2.3 Changing Role of AIN	2-6
3. AIN Implementation	3-1
3.1 Basic AIN Architecture	3-1
3.2 Services Deployed	3-3
3.2.1 Description of Services	3-5
3.2.1.1 Residential and Business Services	3-6
3.2.1.2 Business Services	3-6
3.2.2 Interexchange Carrier Services	3-7
4. AIN Architecture and Call Model	4-1
4.1 AIN Release 0	4-2
4.2 AIN Release 0.1	4-3
4.3 AIN Release 0.2	4-4
4.4 AIN Architecture	4-9
4.4.1 AIN Configurations	4-10
4.4.2 AIN Network Elements Functions	4-12
4.4.3 SSP - SCP Interface	4-13
4.4.4 SSP - IP Signaling Interface	4-14
4.4.4.1 Local IP Signaling	4-14
4.4.4.2 Remote IP Signaling	4-16
4.4.4.3 Non-Call-Associated Signaling	4-17
4.5 AIN Call Model	4-17
4.5.1 Originating Basic Call Model (OBCM)	4-18
4.5.2 Terminating Basic Call Model (TBCM)	4-21
4.5.3 Call Processing	4-23
4.5.3.1 Trigger Detection Points (TDPs) and Event Detection Points (EDPs)	4-23
4.5.3.2 SCCP Processing and Routing of AIN Messages	4-24
4.5.3.3 Non-Call-Related Functions Supported by SSP	4-25

5. AIN Generic Requirements and IN Standards Relationship	5-1
5.1 Objectives and Scope	5-1
5.2 SSP Functions	5-2
5.3 Call Model	5-3
5.3.1 BCM Components	5-3
5.3.1.1 Originating Basic Call Model	5-4
5.3.1.2 Terminating Basic Call Model	5-7
5.3.2 General Procedures Trigger and Event Detection Point Processing . . .	5-10
5.3.3 Trigger Detection Points (TDPs)	5-10
5.3.4 Event Detection Points (EDPs)	5-11
5.3.5 Summary of Call Model Relationship	5-13
5.4 SSP Messages and Parameters	5-14
5.5 Population Rules for SSP Messages and Parameters	5-14
5.6 BCM Control Messages	5-16
5.7 Request_Report_BCM_Event (NEL)	5-18
5.8 Participant Interactions	5-18
5.9 Facility Monitoring Messages	5-19
5.10 Information Revision Messages	5-20
5.11 Termination Notification Messages	5-20
5.12 Call Party Handling	5-20
5.13 Feature Interactions	5-20
5.14 Signaling Connection Control Part (SCCP) Protocol Errors	5-20
5.15 Transaction Capabilities Application Part (TCAP) Protocol Errors	5-20
5.16 Application Errors	5-21
5.17 Resource Failures	5-21
5.18 Automatic Message Accounting (AMA)	5-21
5.19 Management Aspects	5-21
5.20 Default Routing	5-22
5.21 Protocol Syntax	5-22
5.22 ANSI IN Standard	5-22
6. AIN-Specific Services and AIN Hybrid Services	6-1
6.1 Existing Services	6-1
6.1.1 Calling Name Delivery	6-1
6.1.1.1 Service Description and Features	6-1
6.1.1.2 Benefits	6-3
6.1.1.3 Implementation	6-3
6.1.1.4 Network View	6-4
6.1.2 Area Wide Centrex	6-5
6.1.2.1 Service Description and Features	6-5
6.1.2.2 Benefits	6-7
6.1.2.3 Implementation:	6-8
6.1.2.4 Network View	6-9
6.1.3 Switched Redirect	6-10
6.1.3.1 Service Description and Features	6-10
6.1.3.2 Benefits	6-10
6.1.3.3 Other Applications	6-11
6.1.3.4 Network View	6-11

6.1.4 Privacy Manager	6-12
6.1.4.1 Service Description and Features	6-12
6.1.4.2 Benefits	6-13
6.1.4.3 Implementation	6-13
6.1.4.4 Network View	6-13
6.2 Hybrid Services	6-15
6.2.1 Internet Call Waiting (ICW)	6-15
6.2.1.1 Service Description and Features	6-15
6.2.1.2 Benefits	6-16
6.2.1.3 Implementation	6-16
6.2.1.4 AIN Implementation Scenario	6-16
7. AIN Functional Operations Support	7-1
7.1 AIN Functional Operations Processes	7-3
7.1.1 Service Administration	7-3
7.1.2 Service Activation	7-4
7.1.2.1 Service Negotiation	7-5
7.1.2.2 Logical Resource Assignment	7-6
7.1.2.3 Service Activation Control and Management	7-6
7.1.2.4 Physical Resource Provisioning	7-7
7.1.2.5 Work and Force Management	7-7
7.1.2.6 Subscription Administration	7-8
7.1.2.7 Configuration Management	7-9
7.1.2.8 Network Element Configuration Management	7-10
7.1.2.9 Billing	7-10
7.1.2.10 Other Functions	7-10
7.1.3 Service Assurance	7-10
7.2 AIN Interfaces to Operations Systems	7-11
8. Summary	8-1
8.1 Future of AIN	8-2
Appendix A: References	A-1
Appendix B: Glossary and Acronyms	B-1
Acronyms	B-9

List of Figures

Figure 2-1	Switched-Based Services	2-1
Figure 2-2	Intelligent Network Basis	2-2
Figure 2-3	Advanced Intelligent Network Basis	2-3
Figure 2-4	AIN Services Life Cycle	2-5
Figure 2-5	Evolving Role of Intelligent Network	2-6
Figure 3-1	Typical ILEC Deployed Architecture	3-2
Figure 4-1	AIN Release 0 Call Model and Triggers	4-3
Figure 4-2	AIN Architecture	4-10
Figure 4-3	End Office Configuration	4-11
Figure 4-4	Tandem Configuration	4-12
Figure 4-5	Local IP Signaling Interface	4-15
Figure 4-6	Remote IP Signaling Interface	4-17
Figure 4-7	Originating Basic Call Model (OBCM)	4-19
Figure 4-8	Terminating Basic Call Model (TBCM)	4-22
Figure 5-1	Originating Call Model Relationship	5-13
Figure 5-2	Terminating Call Model Relationship	5-14
Figure 6-1	Calling Name Delivery	6-5
Figure 6-2	Area Wide Centrex	6-9
Figure 6-3	Switched Redirect and Disaster Recovery	6-12
Figure 6-4	Privacy Manager	6-14
Figure 6-5	Internet Call Waiting	6-17
Figure 7-1	LEC Approach to AIN Operations	7-2
Figure 7-2	Service Activation Process	7-4

List of Tables

Table 2-1	AIN Response to Business Drivers	2-4
Table 3-1	Deployment of Business and Residential Services*	3-4
Table 3-2	Deployment of Services for Business Only	3-5
Table 4-1	Allowable Response Messages	4-25
Table 5-1	Originating Detection Points	5-12
Table 5-2	Terminating Detection Points	5-12
Table 5-3	SSF - SCF Differences	5-16
Table 5-4	SCF - SSF Differences	5-18
Table 5-5	Operation Encoding Differences	5-22
Table 5-6	ANSI IN Application Protocol	5-23